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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,337	04/29/2004	Do-Kyoung Kwon	MTKP0172USA	3336
27765	7590	07/01/2008	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION			VO, TUNG T	
P.O. BOX 506				
MERRIFIELD, VA 22116			ART UNIT	PAPER NUMBER
			2621	
			NOTIFICATION DATE	DELIVERY MODE
			07/01/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/709,337	<b>Applicant(s)</b> KWON ET AL.	
	<b>Examiner</b> Tung Vo	<b>Art Unit</b> 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 21 is/are rejected.
- 7) ☒ Claim(s) 4-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/22/08; 02/25/08</u> .                                      | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. In view of the careful reviewed references (US 7,227,901; US 7,027,654). Rejections based on the cited references follow.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joch et al. (US 7,227,901).

Re claim 1, Joch teaches a method for reducing a blocking artifact in a video stream (44 of fig. 4), the method comprising: calculating an activity value representing local activity around a block boundary between a plurality of adjacent blocks in the video stream (p and q of fig. 3a, 112, 114 of fig. 5); determining a region mode according to the activity value (116 and 120 of fig. 5); determining a plurality of thresholds (114 of fig. 5); the thresholds taking into account a user defined offset (UDO) allowing the thresholds to be adjusted according to the UDO value (115 of fig. 5; QP offset A and offset B are obviously inputted by a user); and filtering a plurality of pixels around the block boundary according to the region mode and the thresholds (116, YES, go to 120 of fig. 5, filtering process).

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Joch further teaches the quantization variables from minimum to maximum values (col. 14, lines 38-col. 15, line 20). The disclosure of Joch would obviously encompass at least taking into account differences in quantization parameters QPs of the adjacent blocks to determine a first threshold, a third threshold, a fourth threshold, a fifth threshold, a sixth and a seventh threshold. Therefore, one skill in the art would vary the values of quantization parameters QPs to desired value. Doing so would improve the quality of image.

Re claim 21, Joch further teaches wherein the video stream is an MPEG video stream (col. 1).

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Joch et al. (US 7,227,901) in view of Ameres et al. (US 7,027,654).

Re claim 6, Joch teaches the content activity measure is derived from the absolute value of the separation between sample values of p0, p1, q0, q1 on either side of the boundary 47 (col. 13, lines 23-28) .

It is noted that Joch does not particularly teach wherein calculating the activity value comprises summing absolute differences between pixels V around the block boundary as follows:

$$\text{ACTIVITY} = \sum_{i=0}^4 |p_i - q_{i-1}| + \sum_{i=0}^{12} |p_i - q_{i-1}|$$

However, Ameres teaches calculating the activity value (col. 5, lines 1-10) comprises summing absolute differences between pixels V around the block boundary using the formulas (col. 5, lines 1-10) follows:

$$Side1SAD = \sum_{i=1}^4 \text{abs}(x_i - x_{i-1})$$

$$Side2SAD = \sum_{i=5}^9 \text{abs}(x_i - x_{i-1})$$

Taking the teachings of Joch and Ameres as a whole, it would have been obvious to one of ordinary skill in the art to incorporate the teachings of Ameres into the method of Joch in order to reduce the decoder complexity on vector processing machines that are capable of doing the same operation to multiple values stored sequentially in a machine's registers by lowering the complexity of the 2 dimensional transform and decoding time.

#### ***Allowable Subject Matter***

3. Claims 4-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yu et al. (US 6,823,089) disclose method of determining the extent of blocking and contouring artifacts in a digital image.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tung Vo/  
Primary Examiner, Art Unit 2621